

REMARKS/ARGUMENTS

Claims 1-8, 10, and 31-46 are pending.

Claims 7, 37, and 45 are rejected under 35 U.S.C. 112. Applicants have amended claims 7, 37, and 45 to overcome the rejections.

Claims 31-38 are rejected under 35 U.S.C. 101 as not limited to statutory embodiments. Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claim 31. Claims 32-38 depend from claim 31.

In particular, amended claim 31 describes: an article of manufacture comprising a computer readable medium storing code for assigning priorities, wherein the code is executed on a processor of a computer and causes operations to be performed. For example, Applicants' Specification, paragraph 50, describes:

The term "article of manufacture" as used herein refers to code or logic implemented in hardware logic (e.g., an integrated circuit chip, Programmable Gate Array (PGA), Application Specific Integrated Circuit (ASIC), etc.) or a *computer readable medium, such as magnetic storage medium (e.g., hard disk drives, floppy disks,, tape, etc.), optical storage (CD-ROMs, optical disks, etc.), volatile and non-volatile memory devices (e.g., EEPROMs, ROMs, PROMs, RAMs, DRAMs, SRAMs, firmware, programmable logic, etc.). Code in the computer readable medium is accessed and executed by a processor.* [Emphasis added.]

Claims 1-5, 31-35, and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over West (US 6,912,629) in view of Brown (US 7,107,316). Applicants respectfully traverse, but, in order to expedite prosecution, Applicants have amended claims 1, 31, and 39.

Applicants' Specification, paragraph 2, describes that, since the priority assigned to each request is used by a resource manager at the primary and secondary storage subsystems to govern how resources (e.g., processor power for processing the I/O requests, memory for storing data, and hardware to perform data movement) should be allocated to execute a request, *if the same request is processed in the primary and secondary storage subsystems with different*

priorities, the resources in both the primary may not be efficiently managed and can cause resource constraints.

Amended claims 1, 31, and 39 describe, under control of a primary control unit, determining a type of the request, wherein the type of the request includes a synchronous copy command, an asynchronous copy command, and an establish with copy command; assigning a priority to the request based on the type of the request by: assigning the request a high priority when the type of the request is the synchronous copy command and a host has not assigned a priority to the request; assigning the request a medium priority when the type of the request is the asynchronous copy command; and assigning the request a low priority when the type of the request is the establish with copy command; and sending a command to a secondary control unit, wherein the command includes the request and the assigned priority, wherein the primary control unit and the secondary control unit allocate resources to handle the request based on the assigned priority; and under control of the secondary control unit, using the priority assigned to the request by the primary control unit to process the request (e.g., Specification, paragraphs 38-46; Figure 2).

On page 5 of the Office Action, the Examiner submits that the West patent does not specifically teach to assign a priority to the request based on the type of the request and to handle the request based on the assigned priority, but cites the Brown patent as teaching this. The Brown patent describes *a priority requirement set by a user* receiving the message request and *that a priority requirement is determined for the message request according to priority settings designated by a receiving user* for whom the message request is intended (Abstract; Col. 2, lines 43-58; Col. 9, lines 19-33). The Brown patent also describes that each of general priority, subject priority, user priority, time priority, bonuses, away messages, and window treatment may be further specified according to the type of message request being received (Col. 9, lines 19-33). Applicants respectfully submit that the combination of West and Brown describes assigning priorities according to priority settings designated by a receiving user and this does not teach or suggest, and, in fact, teaches away from, *under control of a primary control unit, assigning a priority to the request based on the type of the request by: assigning the request a high priority when the type of the request is the synchronous copy command and a host has not assigned a priority to the request; assigning the request a medium priority when the type of the request is*

the asynchronous copy command; and assigning the request a low priority when the type of the request is the establish with copy command.

As to sending a command to a secondary control unit, wherein the command includes the request and the assigned priority, wherein the primary control unit and the secondary control unit allocate resources to handle the request based on the assigned priority, the Examiner cites the West patent, Col. 5, lines 40-43 (Office Action, page 5). The West patent describes that the secondary system is capable of transmitting a copy of the point-in-time information stored on the secondary system to the primary system when requested by the primary system (Col. 4, lines 40-43). The West patent describes that commands produced by the primary storage controller or the data of the primary volume can be communicated to a secondary volume associated with the secondary controller (Col. 5, lines 25-30; 36-39). Applicants respectfully submit that the combination of West and Brown merely describes sending commands between the primary and secondary storage controllers, which does not teach or suggest sending a command to a secondary control unit, *wherein the command includes the request and the assigned priority*, wherein the primary control unit and the secondary control unit allocate resources to handle the request based on the assigned priority.

Amended claims 1, 31, and 39 also describe, under control of the secondary control unit, using the priority assigned to the request by the primary control unit to process the request. The West patent describes that the secondary system is capable of transmitting a copy of the point-in-time information stored on the secondary system to the primary system when requested by the primary system (Col. 4, lines 40-43). The West patent describes synchronous PPRC (Col. 2, lines 43-58). The West patent describes point-in-time copies (Col. 9, lines 19-33). The Brown patent, Col. 7, lines 27-46, describes that each user sending a message request from one of client message systems may assign a priority value to the message request, and messaging server then determines the priority requirement for the message request. Applicants respectfully submit that having the user at the client assign a priority value and having the server determine a priority value teaches away from *under control of the secondary control unit, using the priority assigned to the request by the primary control unit to process the request*.

Thus, amended claims 1, 31, and 39 are not taught or suggested by the West patent or the Brown patent, either alone or in combination.

Dependent claims 2-5, 32-35, and 40-43 incorporate the language of one of independent claims 1, 31, and 39 and add additional novel elements. Therefore, dependent claims 2-5, 32-35, and 40-43 are not taught or suggested by the West patent or the Brown patent, either alone or in combination, for at least the same reasons as were discussed with respect to claims 1, 31, and 39.

Claims 6-8, 36-38, and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over West and Brown and further in view of Meaney (US 5,564,062). Applicants respectfully traverse. Claim 7 now depends from claim 1 and has been discussed with reference to the rejection of claim 1.

Moreover, Applicants respectfully submit that the Meaney patent does not cure the defects of the West and Brown patents with respect to claims 1, 31, and 39. For example, the Meaney patent does not teach or suggest the subject matter of amended claims 1, 31, and 39. Therefore, amended claims 1, 31, and 39 are not taught or suggested by the West patent, the Brown patent or the Meaney patent, either alone or in combination.

Dependent claims 6-8 each incorporate the language of one of independent claims 1, 31, and 39 and add additional novel elements. Therefore, dependent claims 6-8 are not taught or suggested by the West patent, the Brown patent or the Meaney patent, either alone or in combination, for at least the same reasons as were discussed with respect to claims 1, 31, and 38.

In addition, claims 6, 36, and 44 describe that the request is issued with a synchronous Peer-to-Peer Remote Copy command and further comprising: receiving a host priority with the request; and mapping the host priority to a priority in a high priority range having multiple priority values based on the host priority, pending Input/Output (I/O) requests, and available resources (e.g., Applicants' Specification, paragraph 41). For example, Applicants' Specification, paragraph 41, describes that the priority assignment process would map *any I/O request from the host* into the high priority range. Applicants' Specification, paragraph 41 describes an example in which, if an establish with copy command was being performed for data that the host I/O request was attempting to update, that copy command would have to be completed before the host I/O request is processed, and, in this case, the host I/O request may be assigned a priority of 3. The Brown patent, Col. 9, line 24 – Col. 10, line 7, describes general priority, subject priority, user priority, time priority, bonus priority, away priority, and window treatment priority.

Applicants respectfully submit that the combination of cited references does not teach or suggest

mapping the host priority to a priority in a high priority range having multiple priority values based on the host priority, pending Input/Output (I/O) requests, and available resources.

On page 2 of the Office Action, the Examiner submits that "one cannot show nonobviousness by attaching references individually where the rejections are based on combinations of references". Applicants respectfully submit that when a particular reference is discussed, it is discussed with reference to the Examiner's use of that reference in the rejection and to respond to the Examiner's arguments/remarks about that reference.

Conclusion

For all the above reasons, Applicants submit that the pending claims are patentable. Should any additional fees be required beyond those paid, please charge Deposit Account No. 09-0449.

The attorney of record invites the Examiner to contact her at (310) 553-7973 if the Examiner believes such contact would advance the prosecution of the case.

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